

PUBLICATIONS

Michael. J. Aftosmis

1. Nemec, M., and Aftosmis, M. J., "Output Error Estimates and Mesh Refinement in Aerodynamic Shape Optimization." *AIAA Paper 2013-0865*, 51st AIAA ASM Meeting and Exhibit, Grapevine TX, January 2013.
2. Park, M., Aftosmis, M..J., Campbell, R., Carter, M., Cliff, S., and Bangert, L., "Summary of the 2008 NASA Fundamental Aeronautics Program Sonic Boom Prediction Workshop." *AIAA Paper 2013-0649*, 51st AIAA ASM Meeting and Exhibit, Grapevine TX, January 2013.
3. Nguyen, N., Trinh K., Reynolds K., Kless, J., Aftosmis, M. J., and Urnes J., "Elastically Shaped Wing Optimization and Aircraft Concept for Improved Cruise Efficiency." *AIAA Paper 2013-0141*, 51st AIAA ASM Meeting and Exhibit, Grapevine TX, January 2013.
4. Kless, J., Aftosmis, M.J., Ning, S.A., and Nemec, M., "Inviscid Analysis of Extended Formation Flight". *ICCFD7 Paper-4306*. Seventh International Conference on Computational Fluid Dynamics (ICCFD7), Big Island, HI, July 2012.
5. Anderson, G.R., Aftosmis, M.J., and Nemec, M., "Constraint-based Shape Parameterization for Aerodynamic Design". *ICCFD7 Paper-2001*. Seventh International Conference on Computational Fluid Dynamics (ICCFD7), Big Island, HI, July 2012.
6. Wintzer, M., Kroo, I., Aftosmis, M., and Nemec, M., "Conceptual Design of Low Sonic Boom Aircraft Using Adjoint-Based CFD". *ICCFD7 Paper-2005*. Seventh International Conference on Computational Fluid Dynamics (ICCFD7), Big Island, HI, July 2012.
7. Cliff, S.E., Elmiligui, A., Aftosmis, M.J., Thomas, S., Morgenstern, J., and Durston, D.A., "Design and Evaluation of a Pressure Rail for Sonic Boom Measurement in Wind Tunnels". *ICCFD7 Paper-2006*. Seventh International Conference on Computational Fluid Dynamics (ICCFD7), Big Island, HI, July 2012.
8. Berger, M.J., and Aftosmis, M.J., "Progress Towards a Cartesian Cut-Cell Method for Viscous Compressible Flow". *AIAA Paper 2012-1301*, 50th AIAA ASM Meeting and Exhibit, Nashville, TN, January 2012.
9. Anderson, G.R., and Aftosmis, M.J., "Parametric Deformation of Discrete Geometry for Aerodynamic Shape Design". *AIAA Paper 2012-0965*, 50th AIAA ASM Meeting and Exhibit, Nashville, TN, January 2012.

10. Bakhtian, N.M., and Aftosmis, M.J., "Maximum attainable drag limits for atmospheric entry via super- sonic retropropulsion". Technical poster, *Society of Women Engineers National Conference*, Chicago, IL, October 2011.
11. Saini, S., Mehrotra, P., Taylor, K., Aftosmis, M., and Biswas, R., "Performance Analysis of CFD Application Cart3D Using MPIInside and Performance Monitor Unit Data on Nehalem and Westmere Based Supercomputers," *HPCC2011-255*, 13th IEEE International Conference on High Performance Computing and Communications, Banff, Alberta, Canada, September 2011.
12. Bakhtian, N. M., and Aftosmis, M. J., Addressing the Deceleration Challenge: Drag Augmentation for Atmospheric Entry," *4th IEEE International Conference on Space Mission Challenges for Information Technology*, Palo Alto CA, August 2, 2011 (invited)
13. Aftosmis, M. J., Nemec, M., and Cliff, S. E., "Adjoint-Based Low-Boom Design with Cart3D," *AIAA Paper 2011-3500*, 29th AIAA Applied Aerodynamics Conference, Honolulu, HI, June 2011.
14. Bakhtian, N. M. and Aftosmis, M. J., "Analysis of Inviscid Simulations for the Study of Supersonic Retropropulsion," *AIAA Paper 2011-3194*, 29th AIAA Applied Aerodynamics Conference, Honolulu, HI, June 2011.
15. Kless, J. and Aftosmis, M. J., "Analysis of Grid Fins for Launch Abort Vehicle Using a Cartesian Euler Solver," *AIAA Paper 2011-3666*, 29th AIAA Applied Aerodynamics Conference, Honolulu, HI, June 2011.
16. Elmiligui, A. A., Cliff, S. E., Wilcox, F., Bangert, L., Nemec, M., Aftosmis, M. J., and Parlette, E., "Sonic Boom Computations for a Mach 1.6 Cruise Low Boom Configuration and Comparisons with Wind Tunnel Data," *AIAA Paper 2011-3496*, 29th AIAA Applied Aerodynamics Conference, Honolulu, HI, June 2011.
17. N. M. Bakhtian and M. J. Aftosmis. Maximum Attainable Drag Limits for Atmospheric Entry via Supersonic Retropropulsion. In *Proceedings of the 8th International Planetary Probe Workshop*, Portsmouth, VA, June 6-10 2011
18. Nemec, M., and Aftosmis, M. J., "Parallel adjoint framework for aerodynamic shape optimization of component-based geometry," *AIAA Paper 2011-1249*, 49th AIAA Aerospace Sciences Meeting, Orlando, FL, Jan 2011.
19. Bakhtian, N. M., and Aftosmis, M. J., "Parametric Study of Peripheral Nozzle Configurations for Supersonic Retropropulsion." *Jol. Spacecraft and Rockets*, 47(6):935-950. Jan 2010.
20. Saini, S., Mehrotra, P., Aftosmis, M., Chang, J., and Biswas, R. "Impact of simultaneous multi-threading on scientific and engineering applications."

17th IEEE International Conference on High Performance Computing (HiPC 2010), Dec. 2010.

21. Bakhtian, N. M., and Aftosmis, M. J., "Parametric Study of Peripheral Nozzle Configurations for Supersonic Retropropulsion." *AIAA-Paper 2010-1239*, January 2010.
22. Hu, P., Zhao, H., Kamakoti, R., Dittakavi, N., Xue, L., Ni, K., Mao, S., Marshall, D. D., and Aftosmis, M. J., "Towards Efficient Viscous Modeling Based on Cartesian Methods for Automated Flow Simulation.", *AIAA Paper 2010-1472*, January 2010.
23. Aftosmis, M.J., Schwing, A., and Stewart, P.C. "Analysis of the ALAS at High-Alpha with ACM Jets Using Cart3D." *NASA CEV Aerosciences Project Technical Brief EG-CAP-09-140*, November 2009.
24. Aftosmis, M. J., and Nemec, M., "Exploring discretization error in simulation-based aerodynamic databases." *Proceedings of the 21st International Conference on Parallel Computational Fluid Dynamics*, Ed. R. Biswas, DEStech Publications, Inc., Lancaster, PA. May 2009.
25. Berkenstock, D.C., and Aftosmis, M.J. "Structure-preserving parametric deformation of legacy geometry," *AIAA Paper 2008-6026*, Sept. 2008.
26. Wintzer, M., Nemec, M., and Aftosmis, M.J., "Adjoint-based adaptive mesh refinement for sonic-boom prediction," *AIAA Paper 2008-6593*, Jun. 2008.
27. Aftosmis, M.J., "Analysis of the ALAS LAM/CM separation using Cart3D," *NASA CEV Aerosciences Project Technical Brief EG-CAP-08-99*, May 2008.
28. Aftosmis, M.J., and Rogers S. E., "Effects of jet-interaction on pitch control of a launch abort vehicle," *AIAA Paper 2008-1281*, Jan. 2008.
29. Dannenhoffer, J.F., and Aftosmis, M.J., "Automatic creation of quadrilateral patches on boundary representations," *AIAA Paper 2008-0923*, Jan. 2008.
30. Nemec, M., Aftosmis, M.J., and Wintzer M., "Adjoint-based adaptive mesh refinement for complex geometries," *AIAA Paper 2008-0725*, Jan. 2008.
31. Nemec, M., and Aftosmis, M. J., "Adjoint Sensitivity Computations for an Embedded-Boundary Cartesian Mesh Method," *Jol. Computational Physics* (2007), doi:10.1016/j.jcp.2007.11.018.
<http://dx.doi.org/10.1016/j.jcp.2007.11.018> (persistent link)
32. Aftosmis, M.J., "LAV-068 ACM Assessment using Cart3D" *NASA CEV Aerosciences Project Technical Brief EG-CAP-07-107*, Aug. 2007.
33. Saini, S., Sandstrom, T., Jespersen, D., Talcott, D., Djomehri, J., Aftosmis, M., Kamil, S., Biswas, R., Oliker, L., Powers, A., Mehrotra, P., and Ciotti,

- R., "Application Based Performance Characterization of a Dual-Core IBM POWER5+ Computing System." IBM System Scientific User Group (ScicomP), Munich, Germany, July 2007.
- 34. Nemec, M., and Aftosmis, M.J., "Adjoint error-estimation and adaptive refinement for embedded-boundary Cartesian meshes." *AIAA Paper 2007-4187*, 18th AIAA CFD Conference, Miami, FL., Jun. 2007.
 - 35. Biswas, R., Aftosmis, M.J., Kiris, C., and Shen, B.-W., "2007: Petascale Computing: Impact on Future NASA Missions." In *Petascale Computing: Algorithms and Applications* (D. Bader, ed.), Chapman and Hall /CRC Press, Dec. 2007.
 - 36. Aftosmis, M.J., "LAV-054 ACM Assessment using Cart3D" *NASA CEV Aerosciences Project Technical Brief EG-CAP-07-55*, May 2007.
 - 37. Nemec, M., and Aftosmis, M.J., "Adjoint sensitivity computations for an embedded-boundary Cartesian mesh method." Submitted Jol. Comp. Phy., May 2007.
 - 38. Mavriplis, D.J., Aftosmis, M.J., and Berger, M.J., "High resolution aerospace applications using the NASA Columbia supercomputer." *International Journal of High Performance Computing Applications*. **21**(1) pp. 106-126. Jan. 2007
 - 39. Murman, S.M., and Aftosmis, M.J., "Dynamic analysis of atmospheric-entry probes and capsules." *AIAA-Paper 2007-0074*, Jan. 2007.
 - 40. Persson, P-O., Aftosmis, M.J., , and Haimes, R., "On the use of Loop subdivision surfaces for surrogate geometry." Proceedings of the 15th International Meshing Roundtable, Birmingham, AL, Oct. 2006.
 - 41. Nemec, M., and Aftosmis, M.J., "Aerodynamic Shape Optimization Using a Cartesian Adjoint Method and CAD Geometry," *NAS Technical Report NAS-07-007*.
 - 42. Nemec, M., and Aftosmis, M.J., "Adjoint Sensitivity Computations for an Embedded-Boundary Cartesian Mesh Method and CAD Geometry," *Proc. of Fourth Intl. Conf. on Comp. Fluid Dynamics (ICCFD4)*, July 2006.
 - 43. Nemec, M., and Aftosmis, M.J., "Aerodynamic Shape Optimization Using a Cartesian Adjoint Method and CAD Geometry," *AIAA Paper 2006-3456*, 24th AIAA Applied Aerodynamics Conference, June 2006.
 - 44. Aftosmis, M.J., Berger, M.J., and Alonso, J.J., "Applications of a Cartesian Mesh Boundary- Layer Approach for Complex Configurations," *AIAA Paper 2006-0652*, Jan. 2006.
 - 45. Aftosmis, M.J., Berger, M.J., Biswas, R., Djomehri, M.J., Hood, R., Jin, H., and Kiris, C., "A Detailed Performance Characterization of Columbia using

- Aeronautics Benchmarks and Applications," *AIAA Paper 2006-0084*, Jan. 2006.
46. Mavriplis, D.J., Aftosmis, M.J., and Berger, M.J., "High Resolution Aerospace Applications using the NASA Columbia Supercomputer." *NAS Technical Report NAS-05-018*, Dec. 2005.
 47. Brooks, W., Aftosmis, M.J., Biegel, B., Biswas, R., Ciotti, R., Freeman, K., Henze, C., Hinke, T., Haoqiang, J., Thigpen, W., "Impact of the Columbia supercomputer on NASA science and engineering applications", *Proc. 7th Intl. Workshop on Dist. Comp.*, Kharagpur, India, Springer-Verlag. Dec. 2005.
 48. Mavriplis, D.J., Aftosmis, M.J., and Berger, M.J., "High Resolution Aerospace Applications using the NASA Columbia Supercomputer." SC'05 Supercomputing 2005, International Conference of High Performance Computing, Networking, and Storage, Seattle, WA. Nov 2005.
 49. Aftosmis, M.J., "Parameter Studies, Time-Dependent Simulations and Design with Automated Cartesian Methods." *JAXA-SP-05-017*, Proceedings of Aerospace Numerical Simulation Symposium June 23-24, 2005, Japan Aerospace Exploration Agency, JAXA Tokyo, Japan. Feb. 2006.
 50. Nemec, M., and Aftosmis, M.J., "Adjoint algorithm for CAD-based shape optimization using a Cartesian method." *AIAA Paper 2005-4987*, 17th Computational Fluid Dynamics Conference, Toronto, Ontario, Canada. Jun. 2005.
 51. [Nemec, M., and Aftosmis, M.J., "Adjoint algorithm for CAD-based shape optimization using a Cartesian method."](#) *NAS Technical Report NAS-05-014*, Oct. 2005.
 52. Berger, M.J., Aftosmis, M.J., and Murman, S. M., ["Analysis of slope limiters on irregular grids"](#), *NAS Technical Report NAS-05-007*, May 2005.
 53. Nemec, M, Aftosmis, M.J., Murman, S.M., and Pulliam, T.H., "Adjoint formulation for an embedded-boundary Cartesian method," *NAS Technical Report NAS-05-008*, May, 2005.
 54. Berger, M.J., Aftosmis, M.J., Marshall, D.D., and Murman, S.M., "Performance of a new CFD flow solver using a hybrid programming paradigm." *Jol. of Parallel and Distributed Computing.*, **65** pp.414-423, 2005.
 55. Berger, M.J., Aftosmis, M.J., and Murman, S. M., ["Analysis of slope limiters on irregular grids"](#), *AIAA Paper 2005-0490*, Jan. 2005.
 56. [Murman, S.M., Aftosmis, M.J., and Rogers, S.E. "Characterization of Space Shuttle Ascent debris using a Cartesian method"](#) *AIAA Paper 2005-1223*, Jan. 2005.

57. Nemec, M., Aftosmis, M.J., Murman, S.M., and Pulliam T. "Adjoint formulation for an embedded-boundary Cartesian method" *AIAA Paper 2005-0877*, Jan. 2005.
58. Murman, S.M., Aftosmis, M.J., and Nemec, M., "Automated parameter studies using a Cartesian method." *NAS Technical Report NAS-04-015*, Nov. 2004.
59. Krishnakumar, K., Gundy-Burlet, K.G., Aftosmis, M.J., Nemec, M., Limes, G., Berry, M., and Logan, M., "Intelligent control for the BEES Flyer," *AIAA-Paper 2004-6274*, AIAA 1st Intelligent Systems Technical Conference, Sept. 2004.
60. Murman, S.M., Aftosmis, M.J., and Nemec, M., "Automated parameter studies using a Cartesian method." *AIAA Paper 2004-5076*, Aug. 2004.
61. Pandya, S. A., Murman, S.M., and Aftosmis, M.J., "Validation of inlet and exit boundary conditions for a Carteisan method." *AIAA Paper 2004-4837*, Aug. 2004.
62. Murman, S.M., Aftosmis, M.J., and Berger, M.J., "Simulations of store separation from an F/A-18 with a Cartesian method." *Jol. of Aircraft*, **41**(4):870-879, Jul-Aug 2004.
63. Chaderjan, N.M., Rogers, S.E., Aftosmis, M.J., Pandya, S.A., Ahmad, J.U., and Tejnil, E., "Automated Euler and Navier-Stokes database generation for a glide-back booster." *Proceedings of the 3rd International Conference on Computational Fluid Dynamics*, Toronto, Canada, Springer-Verlag, July 2004.
64. Nemec, M., Aftosmis, M.J., Pulliam, T.H., "On the use of CAD and Carteian methods for aerodynamic optimization." *Computational Fluid Dynamics 2004, Proceedings of the 3rd International Conference on Computational Fluid Dynamics, ICCFD 3*, Toronto, Canada, 12-16 July 2004, Eds. C. Groth and D. W. Zingg, Springer-Verlag, Berlin, pp. 699-704, 2006.
65. Gomez, R.J., Vicker, D., Rogers, S.E., Aftosmis, M.J., Chan, W.M., Meakin, R., Murman, S.M., "STS-107 investigation ascent CFD support", *AIAA Paper 2004-2226*, Jun. 2004.
66. Murman, S.M., Aftosmis, M.J., and Berger, M.J., "Simulations of a 6-DOF motion with a Cartesian CFD method." *AIAA Jol. Accepted for publication*, 2004.
67. Murman, S. M., Aftosmis, M.J., and Berger M.J., "Numerical simulation of rolling-airframes using a multi-level Cartesian method." *Jol. Spacecraft and Rockets*, **41**(3):426-435. May 2004.

68. Aftosmis, M.J., Berger, M.J., and Murman, S.M., "Applications of space-filling curves to Cartesian methods for CFD." *NAS Technical Report NAS-04-001*, March 2004
69. Nemec, M., Aftosmis, M.J., and Pulliam, T. H., "CAD-based aerodynamic design of complex configurations using a Cartesian method." *NAS Technical Report NAS-04-002*, March 2004.
70. Aftosmis, M.J., Berger, M.J., and Murman, S.M., "Applications of space-filling curves to Cartesian methods for CFD." *AIAA Paper 2004-1232*, Reno, NV, Jan. 2004
71. Nemec, M., Aftosmis, M.J., and Pulliam, T. H., "CAD-based aerodynamic design of complex configurations using a Cartesian method." *AIAA Paper 2004-0113*, Reno, NV, Jan. 2004.
72. Gomez, R.J., Aftosmis, M.J., Vicker, D., Meakin, R.L., Stuart, P.C., Rogers, S.E., Greathouse, J.S., Murman, S.M., Chan, W.M., Lee, D.E., Condon, G.L., and Crain, T. "Debris Transport Analysis". Columbia Accident Investigation Board (CAIB) Final Report, Vol II, Appendix D.8. Government Printing Office, October 2003.
73. Murman, S. M, and Aftosmis, M. J., "Cartesian-grid simulations of a canard-controlled missile with a spinning tail. *AIAA Paper 2003-3670*, 21st AIAA Applied Aerodynamics Conference, June 2003.
74. Rogers, S. E., Aftosmis, M. J., Pandya, S.A., and Chaderjian, N. M., Tejnil, E., and Ahmad, J., "Automated CFD parameter studies on distributed parallel computers." *AIAA Paper 2003-4229* 16th AIAA Computational Fluid Dynamics Conference, June 2003.
75. Chaderjian, N. M., Rogers, S. E., Aftosmis, M. J., Pandya, S.A., Tejnil, E., and Ahmad, J., "Automated CFD database generation for a 2nd generation glide-back booster." *AIAA Paper 2003-3788*, June 2003.
76. Murman, S.M., Aftosmis, M.J., and Berger, M.J., "Implicit approaches for moving boundaries in a 3-D Cartesian method." *AIAA Paper 2003-1119*, 41st AIAA Aerospace Sciences Meeting, Reno NV, Jan. 2003.
77. Murman, S.M., Aftosmis, M.J., and Berger, M.J., "Simulations of 6-DOF motion with a Cartesian method." *AIAA Paper 2003-1246*, 41st AIAA Aerospace Sciences Meeting, Reno NV, Jan. 2003.
78. Murman, S.M., Chan, W.M., Aftosmis, M.J., and Meakin, R.L., "An interface for specifying rigid-body motions for CFD applications." *AIAA Paper 2003-1237*, 41st AIAA Aerospace Sciences Meeting, Reno NV, Jan. 2003.
79. Murman, S. M., Aftosmis, M.J., and Berger M.J., "Numerical simulation of rolling-airframes using a multi-level Cartesian method." *AIAA Paper 2002-*

2798, 20th AIAA Applied Aerodynamics Conference, St. Louis, MO, Jun. 2002.

80. Haimes, R., and Aftosmis M.J, "On generating high quality "water-tight" triangulations directly from CAD" Proc. of the 8th Internat. Grid Conf., Honolulu, HI, Jun. 2002.
81. Marshall, D.D., Aftosmis, M.J., and Ruffin, S.M., "Study of parallelization enhancements for Cartesian grid solver." Proceedings of the International conference on Parallel CFD 2002, Kansai Science City, Japan, May, 2002.
82. Aftosmis M.J., and Berger M.J., "Multilevel error estimation and adaptive h-refinement for Cartesian meshes with embedded boundaries." *AIAA Paper 2002-0863*, 40th AIAA Aerospace Sciences Meeting and Exhibit, Reno NV, Jan. 2002.
83. S. A. Pandya and M. J. Aftosmis, "Computation of external aerodynamics for a canard rotor/wing aircraft." *AIAA 2001-0997*, 39th AIAA Aerospace Sciences Meeting and Exhibit, Reno NV, Jan. 2001.
84. Hendriks, A., Haimes, R., and Aftosmis, M.J., "Filling the void - Interpolating in Cartesian cut cells", *AIAA Paper 2001-0916*, Jan. 2001.
85. Berger, M. J, and Aftosmis, M. J., "Parallel multigrid on Cartesian meshes with complex geometry", *Proc. of. Internat. Parallel CFD 2000 Conf.*, Trondheim Norway, May 2000.
86. Aftosmis, M. J., Berger, M. J., and Adomavicius, G., "A parallel multilevel method for adaptively refined Cartesian grids with embedded boundaries." *AIAA Paper 2000-0808*, 38th Aerospace Sciences Meeting and Exhibit, Reno, NV, Jan. 2000.
87. Chase, R.L., Mehta, U. B., Bogdanoff, D.W., Park, C., Lawrence, S., and Aftosmis, M. J., "Comments on an MHD energy bypass engine powered space-liner." *AIAA Paper 99-4975*, AIAA 9th International Space Planes and Hypersonic Systems and Technologies Conference. Norfolk, VA, Nov. 1999.
88. Aftosmis, M. J., Berger, M. J., and Adomavicius, G., "A parallel Cartesian approach for external Aerodynamics of vehicles with complex geometry." *Proceedings of the Thermal and Fluids Analysis Workshop 1999*. NASA Marshall Spaceflight Center, Huntsville, AL, Sep. 1999.
89. Aftosmis, M.J., "On the use of CAD-native predicates and geometry in surface meshing." NASA/TM-1999-208782, Aug. 1999.
90. Aftosmis, M.J., Delanaye, M., Haimes, R., "Automatic generation of CFD-ready surface triangulations from CAD geometry." *AIAA Paper 99-0776*, Jan. 1999.

91. Delanaye, M., Aftosmis, M.J., Berger, M.J., Liu, Y., and Pulliam, T.H., "Automatic hybrid-Cartesian grid generation for high-Reynolds number flows around complex geometries." *AIAA Paper 99-0771*, Jan. 1999.
92. Berger, M.J., and Aftosmis, M.J., "Aspects (and aspect ratios) of Cartesian mesh methods." *Proceedings of the 16th International Conference on Numerical Methods in Fluid Mechanics*, Arcachon, France, July 1998.
93. Aftosmis, M.J., Berger, M.J., Melton, J.E., "Robust and Efficient Cartesian Mesh Generation for Component-Based Geometry." *AIAA Journal* **36**(6):952-960, Jun. 1998.
94. Aftosmis, M.J., Melton, J.E., and Berger, M.J., "Adaptive Cartesian Mesh Generation." Chapter 22 in *Handbook of Grid Generation*, Thompson, J, Weatherhill, N., and Soni, B. eds. CRC Press 1998.
95. Aftosmis, M.J., "Aspects of Cartesian Grid Methods for Aerodynamic Flows with Complex Geometries." 28th Lecture Series in Advanced Computational Fluid Dynamics,), von Karman Institute for Fluid Dynamics, Mar., 97.
96. Aftosmis, M.J., Berger, M.J., and Melton, J.E., "Robust and Efficient Cartesian Mesh Generation for Component-Based Geometry." *AIAA Paper 97-1096*, Jan., 1997.
97. Berger, M.J., Aftosmis, M.J., Melton, J.E., "Accuracy, Adaptive Methods and Complex Geometry." Proc. First AFOSR Conf. on Dynam. Motion in CFD, Rutgers, NJ, Jun 96.
98. Aftosmis, M.J., Gaitonde, D., and Tavares, T.S., "On the Behavior of Linear Reconstruction Techniques on Unstructured Meshes," *AIAA J.*, Vol 33, #11 pp2038-2049, Nov., 1995.
99. Aftosmis, M.J., Melton, J.E., Berger, M.J., "Adaptation and Surface Modeling for Cartesian Mesh Methods," *AIAA Paper 95-1725*, Jun., 1995
100. Aftosmis, M.J., "Emerging CFD Technologies and Aerospace Vehicle Design," Proceedings of the NASA Workshop on Surface Modeling, Grid Generation and Related Issues, NASA CP-3291 May 9-22, 1995.
101. Melton, J. E., Aftosmis, M. J., Berger, M. J., and Wong, M. D., "Development and Application of a 3D Cartesian Grid Euler method," in Surface Modeling, Grid Generation, and Related Issues in Computational Fluid Dynamic (CFD) Solutions, NASA CP-3291, May 9-22, 1995.
102. Melton, J.E., Berger, M.J., Aftosmis, M.J., and Wong, M.D., "Development and Application of a 3D Cartesian Grid Euler Method," Proceedings of the NASA Workshop on Surface Modeling, Grid Generation and Related Issues, May 9-22 1995.

103. Melton, J.E., Berger, M.J., Aftosmis, M.J., and Wong, M.D., "3D Applications of a Cartesian Grid Euler Method," *AIAA Paper 95-0853*, Jan., 1995.
104. Aftosmis, M.J., Gaitonde, D., and Tavares, T.S., "The Behavior of Linear Reconstruction Techniques on Unstructured Meshes," WL-TR-94-3023, Feb. 1994.
105. Aftosmis, M.J., "An Upwind Method for Simulation of Viscous Flow on Adaptively Refined Meshes," *AIAA Journal* Vol. 32, No. 2, Feb. 1994, pp.268-277.
106. Aftosmis, M.J., Gaitonde, D., and Tavares, T.S., "On the Accuracy, Stability and Monotonicity of Various Reconstruction Algorithms for Unstructured Meshes," *AIAA Paper 94-0415*, Jan. 1994.
107. Aftosmis, M.J., *Viscous Flow Simulation Using an Upwind Method for Hexahedral Based Adaptive Meshes*, WL-TR-93-3015, March 1993.
108. Aftosmis, M.J., "Viscous Flow Simulation Using an Upwind Method for Hexahedral Based Adaptive Meshes," *AIAA Paper 93-0772*, Jan. 1993.
109. Aftosmis, M.J., *An Upwind Method for the Solution of the 3D Euler and Navier-Stokes Equations on Adaptively Refined Meshes*, WL-TR-92-3107, Oct. 1992.
110. Kroll, N., Gaitonde, D., and Aftosmis, M., *An Examination of Several High Resolution Schemes Applied to Complex Problems in High Speed Flow*, WL-TR-91-3089, Feb. 1992.
111. Aftosmis, M., "A Second-Order TVD Method for the Solution of the 3D Euler and Navier-Stokes Equations on Adaptively Refined Meshes," *Proceedings of the 13th International Conference on Numerical Methods in Fluid Mechanics*, Rome Italy, July 1992.
112. Aftosmis, M.J., "Two Compact Cell-Vertex Methods for Computational Electromagnetics," *AIAA Paper 91-1504*, June 1991.
113. Kroll, N., Gaitonde, D., and Aftosmis, M., "A Systematic Comparative Study of Several High Resolution Schemes for Complex Problems in High Speed Flows," *AIAA Paper 91-0636*, Jan. 1991.
114. Aftosmis, M., and Kroll, N., "A Quadrilateral Based Second-Order TVD Method for Unstructured Adaptive Meshes," *AIAA Paper 91-0124*, Jan. 1991.
115. Aftosmis, M.J., and Baron, J.R., *An Adaptive Grid Algorithm for Nonequilibrium Hypersonic Flows*, WL-TR-90-3002, 1990.
116. Huband, G., Shang, J.S., and Aftosmis, M.J., "Numerical Simulation of an F-16 at Angle of Attack," *Journal of Aircraft* Vol. 27, No. 10, 1990.

117. Huband, G., Shang, J.S., and Aftosmis, M.J., "Numerical Simulation of an F-16 at Angle of Attack," *AIAA Paper 90-0100*, Jan. 1990.
118. Aftosmis, M.J., "Adaptive Grid Embedding in Nonequilibrium Hypersonic Flows," *AIAA Paper 89-1652*, June 1989.
119. Aftosmis, M.J., *An Adaptive Grid Algorithm for Nonequilibrium Hypersonic Flows*, S.M. Thesis, Massachusetts Institute of Technology, Cambridge, MA, 1989.
120. Aftosmis, M.J., "Real Gas Dynamics of Aeroassisted Orbital Transfer Vehicles," Internal Report, Massachusetts Institute of Technology, Cambridge MA, 1988.
121. Aftosmis, M.J., "Thin-Film Heat Transfer Measurements." LICH Lab Report, Syracuse University, Syracuse NY, 1987.